

## WE CLAIM:

1. A method of cooling an ultrasound transducer:
  - immersing, at least partially, said transducer in a volume of fluid contained within a housing, said fluid comprising a first portion occupying a first location in said housing, said first location being proximate to said transducer;
  - receiving thermal energy from said transducer by said first portion;
  - inducing movement of said fluid within said housing;
  - moving, in response to said inducing, said first portion having said thermal energy from said first location to at least a second location in said housing, said second location being different from said first location;
  - moving, in response to said inducing, a second portion of said fluid to said first location; and
  - receiving thermal energy from said transducer by said second portion.
2. The method of Claim 1, wherein said transducer is operative to move within said housing, said inducing further comprising moving said transducer.
3. The method of Claim 2, wherein said transducer requires initialization prior to movement, said inducing further comprising bypassing said initialization.
4. The method of Claim 1, further comprising:
  - providing a fluid moving mechanism located in said housing; and
  - wherein said inducing further comprises activating said fluid moving mechanism.
5. The method of Claim 1, further comprising:
  - sensing a temperature of at least a third portion of said fluid; and
  - wherein said inducing movement further comprises inducing movement of said fluid based on said sensed temperature.

6. The method of Claim 1, wherein at least a third portion said fluid comprises a first phase and a second phase, said inducing further comprising causing said third portion to change from said first phase to said second phase.
7. The method of Claim 6, wherein said first phase comprises one of a liquid and solid and said second phase comprises one of liquid and gas.
8. The method of Claim 1, wherein said fluid comprises a mixture of liquid and gas.
9. The method of Claim 1, further comprising:
  - operating said transducer to image a subject; and
  - wherein said inducing further comprises waiting for said operating to cease before inducing said movement.
10. The method of Claim 9, wherein said inducing further comprises forcing said operating to cease.
11. An ultrasound transducer comprising:
  - a housing;
  - a fluid contained within said housing;
  - a transducer located in said housing and at least partially immersed in said fluid, wherein said fluid comprises a first portion occupying a first location in said housing, said first location being proximate to said transducer, said first portion operative to receive thermal energy from said transducer; and
  - a fluid moving mechanism located in said housing and operative to induce movement of said fluid within said housing wherein said first portion having said thermal energy is induced to move from said first location to a second location in said housing, said second location being different from said first location, and further wherein a second portion of said fluid is induced to move to said first location, said second portion being operative to receive thermal energy from said transducer.

12. The ultrasound transducer of Claim 11, wherein said transducer is movable within said housing, said fluid moving mechanism comprising said movable transducer.
13. The ultrasound transducer of Claim 11, wherein said fluid moving mechanism comprises at least one of a pump, paddle, rotor, impeller, and electrokinetic device.
14. The ultrasound transducer of Claim 11, wherein said fluid moving mechanism further comprises a controller and a temperature sensor coupled with said controller and thermally coupled with said fluid to sense a temperature of at least a third portion of said fluid, said controller operative to control said fluid moving mechanism based at least on said sensed temperature.
15. The ultrasound transducer of Claim 11, wherein at least a third portion of said fluid comprises a first phase and a second phase, said fluid moving mechanism being further operative to cause said third portion to change from said first phase to said second phase.
16. The ultrasound transducer of Claim 15, wherein said first phase comprises one of a liquid and solid and said second phase comprises one of liquid and gas.
17. The ultrasound transducer of Claim 11, wherein said fluid comprises a mixture of liquid and gas.
18. An ultrasound transducer comprising:
  - means for immersing, at least partially, said transducer in a volume of fluid contained within a housing, said fluid comprising a first portion occupying a first location in said housing, said first location being proximate to said transducer such that said first portion receives thermal energy from said transducer;
  - means for inducing movement of said fluid within said housing, causing said first portion having said thermal energy to move from said first location to at least a second location in said housing, said second location being different from

said first location, and causing a second portion of said fluid to move to said first location to receive thermal energy from said transducer.